parish authorities have been forced to levy an additional penny in the pound on the poor-rates, the number of inhabitants who pay being in this neighbourhood so much diminished.

"On reference to the books of the parishes of St. Giles and Bloomsbury, I find that the estimated loss of rental is 15,000*l.*; this is calculated by the rates, which are much less than the sums paid by occupants. At a rough calculation the real loss is 25,000*l.* Any parishioner may ascertain the truth of this statement by examining the books, open for inspection at the vestry of St. Giles's.

"I remain, Sir, your very humble servant,
"AN OLD INHABITANT OF ST. GEORGE'S,
BLOOMSBURY.

"Bloomsbury, January 4."

We beg to remind "An Old Inhabitant of St. George's, Bloomsbury," of the benefit to the rating of this particular district which will be occasioned by the breaking up of such a horrid accumulation of filth and poverty.

WESTMINSTER BRIDGE.

INSTEAD of our own observations, which require illustrative cuts that could not be executed in time to appear in our present number, we this week insert the following communication from a correspondent:—

TO THE EDITOR OF THE BUILDER.

SIR,—At a time when a warfare of opinion is waging upon the reparation and embellishment of Westminster-bridge, between those eminent gentlemen of their respective professions, Messrs. Walker and Burges, the civil-engineers, and Mr. Barry, the celebrated architect, it is with every sense of deference and respect to those gentleman, and with no disparagement to the plan of either, that I beg, through the medium of your highly valuable and instructive publication, to submit to the public the accompanying design, which as a practical man, I have for some time past contemplated as a desideratum in this (almost national) improvement.

Although this project does not participate in the features of either of the above parties' designs, in my opinion it more than embraces the desired objects of both; for whilst its character in *artistical effect* somewhat assimilates with the style of the new Houses of Parliament (though in a far less elaborate degree), it, at the same time, not only affords a greater water-way, but considerably reduces the present steep roadway. This suggestion presented itself some time since, when it may be remembered that one of the piers on the Middlesex side of the bridge sunk suddenly several inches, and this, I believe, after the execution of the work by Messrs. Walker and Burges to the foundations of the piers, rendering them, as they state, much more *secure* than they had ever been before.

During the formation of the Thames Tunnel an opportunity was afforded of witnessing the substrata of the bed of the river, in which there is a considerable vein of silt, or quicksand, and which proved the greatest enemy (with the exception of the water), that that intrepid engineer, Sir I. M. Brunel, had to cope with, and which vein extends below as far as the Nore, and, there is but little doubt, as far up the river. With this impression, and the knowledge of Labeyie's (*cairon-constructed*) piers, it occurred at the time that the ballast-dredging machine completed cutting the low-water channel for the steam-boats (nearly fronting the pier which sank) at this period, that having tapped the strata of silt or quicksand, there is but little doubt that its exit from under the caison caused the sudden settlement which occurred.

Upon examining the costly and stupendous barriers of the coffer-dams which Messrs. Walker and Burges so ably and substantially erected around each of these piers, that with this bulwark, had they been applied only to every other pier, and had those been underpinned (despite of the caison) progressively to the whole depth required, so as to obtain a sound and substantial foundation on such a stratum as might be relied upon for carrying the most massive erection. Having by these means strengthened and lengthened the piers for the requisite additional width, it is presumed by the increased water-way thus gained (*i. e.* by the removal of the intermediate piers), that the springing of the arch, which is described of Tudor form, might, for additional strength and security, spring from a little above the low-water mark, so that the largest or centre arch would in its span be about 140 feet, with a rise not exceeding that of the present centre arch, which is proposed to be united with that of the adjoining one on the Surrey side, so as to embrace more of the actual current as it at present ebbs and flows.

For the practical execution of these works, without interfering with the traffic during the progress of the proposed alterations, it was intended to relieve the bridge throughout of the present balustrading, and to extend over one side of the bridge a footpath 6 feet wide, supported by cantilivers of timber, which might be buried in the roading, and, if necessary, might be strutted from the piers and spandrils. By this addition, a space equal to the present width of roadway might be retained during the progress of the works; and as soon as the alternate piers were extended to the additional width and length required, and the present portion underpinned to the depth of the proposed addition, and carried up as high as the springing, so much of the arches of the present bridge might be removed as the width of roadway would admit. The arches are proposed to be composed of cast-iron perforated Gothic ribs, five feet apart, cast with flanges and fillets to secure cast-iron plates behind them, to form the sinking of the panels in the spandrils, and fair soffits to the arches, which would shew upon every rib archivolt-mouldings traversing longitudinally from springing to springing.

Stone relieving-arches might, for additional security, be constructed between the iron ribs, avoiding the braces and iron-work throughout, and turned upon sand cores, so as to allow of any action in the iron-work by expansion and contraction. By this design it is proposed to widen the bridge to the total width of 60 feet; and the *additional width* is proposed to be *made wholly* upon the *lower side*, as I deem the present bridge to be already too near to the new Houses of Parliament, and by following this plan, the line of the present approaches on either side of the bridge would be better conformed to.

When the above works should be completed to the height of the intended roadway, a similar temporarily-constructed footpath might be applied, and the rest of the present bridge be so far removed, as to complete the remaining portion of this proposed re-construction, even to the balustrading or parapet, which might be either of plain masonry or of cast-iron in ornamental or perforated Gothic panels; the opposite side might then be similarly completed, and the intermediate piers removed.

It may be seen by this arrangement, that on the score of economy, a considerable saving would have been gained by the requisition of only eight of those expensive items in engineering works, called *coffer-dams*, instead of the fifteen required in the *partial*, and since proved *abortive*, reparation of the present defective and incompetent bridge. With every apology for this lengthened trespass on the pages of your instructive work, and with a view that it may bring forth a more eligible design, I remain, Sir, your obedient servant,

A PRACTICAL OBSERVER.

PRESENT ELEVATION OF WESTMINSTER BRIDGE.

PRESENT ROADWAY.

EXTENDED ROADWAY.

PROPOSED ELEVATION OF BRIDGE.

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